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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,077

09/22/2005

Marcos Giovanni Bortoli

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EXAMINER

KASTURE, DNYANESH G

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

05/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,077	Applicant(s) BORTOLI ET AL.	
	Examiner DNYANESH KASTURE	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03 May 2010 has been entered.

Claim Objections

2. Claim 5 is objected to under 35 USC 112 4th paragraph for failing to limit the parent claim. The limitations of this claim “diminishes more rapidly close to the fixation end portion” appear to be present in the parent claim (“diminishes more intensely”).

3. Claims 1, 8 and 9 are objected to because of the following informalities:

4. The word “intensely” in Claim 1 is objected to because it is ambiguous. The word – rapidly – is suggested instead. In Re Claim 8, the last line needs to be completed, the following is suggested: “.. is larger in its region adjacent to the fixation end portion of the flexible vane than elsewhere”. In Re Claim 9, the phrase “configured to distributed” should be -- configured to distributed --.

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Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. In Re Claim 4, the claim is indefinite because it depends on cancelled Claim 3.

Claim Rejections - 35 USC § 102

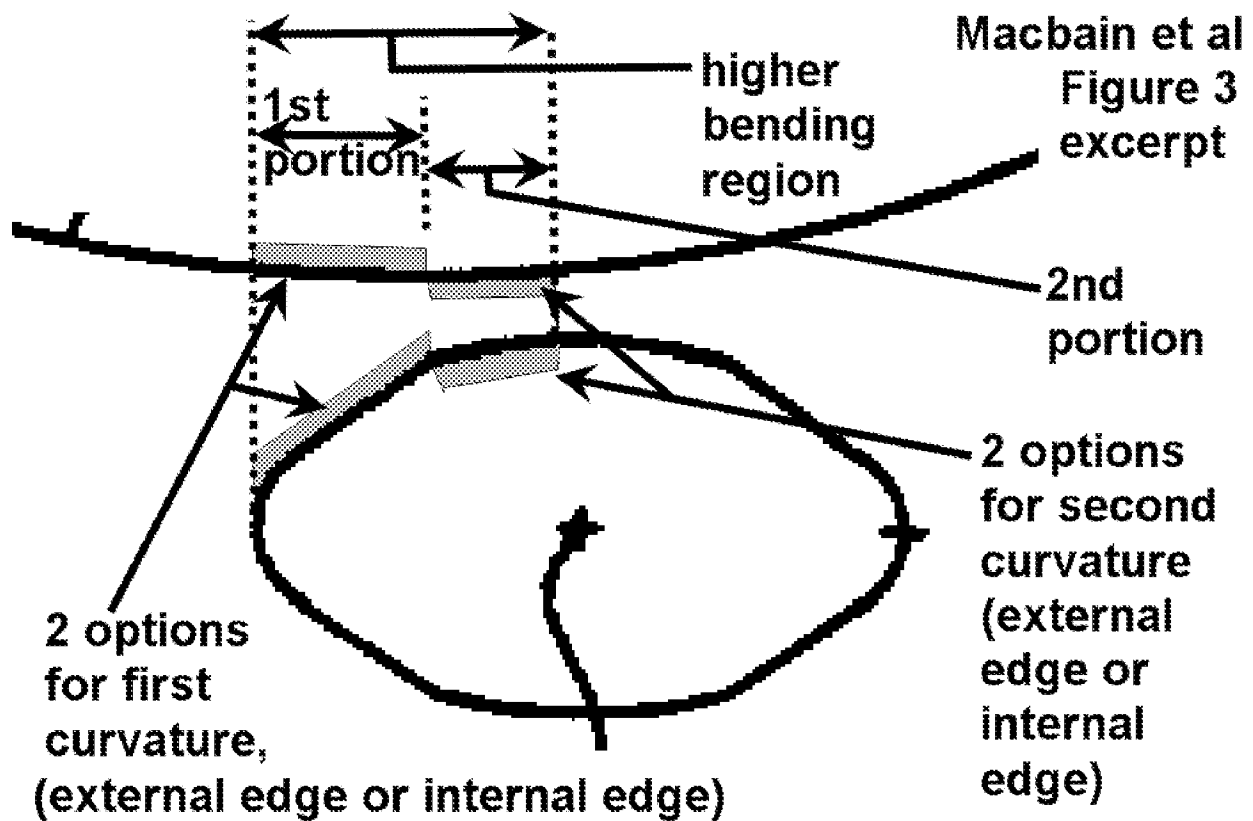
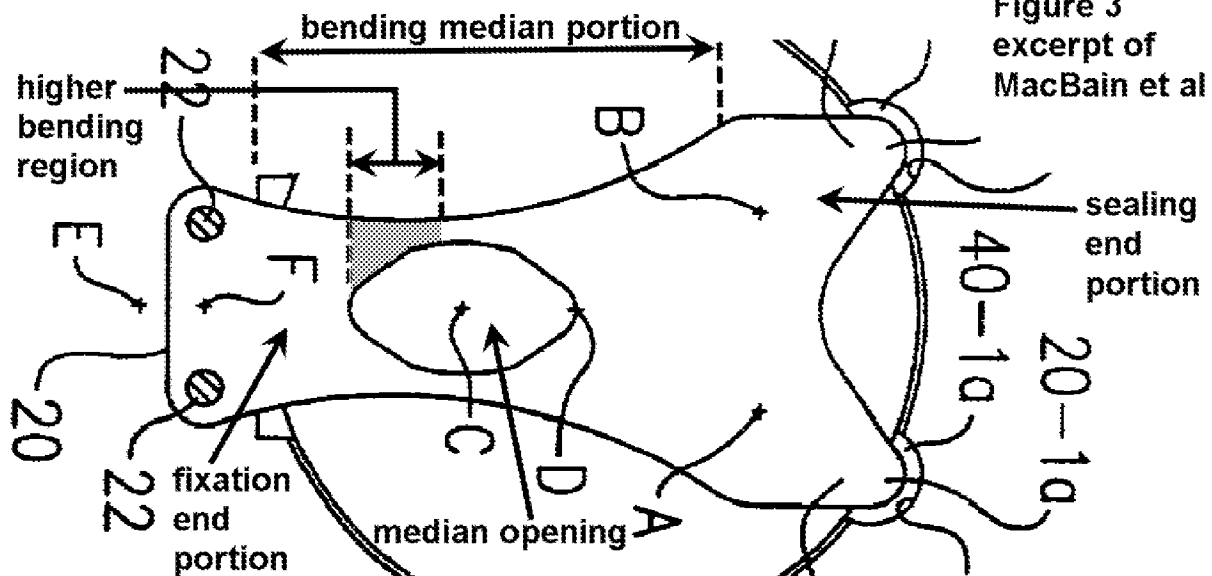
8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by MacBain et al (PG Pub US 20030068245 A1, filing date: October 5, 2001)

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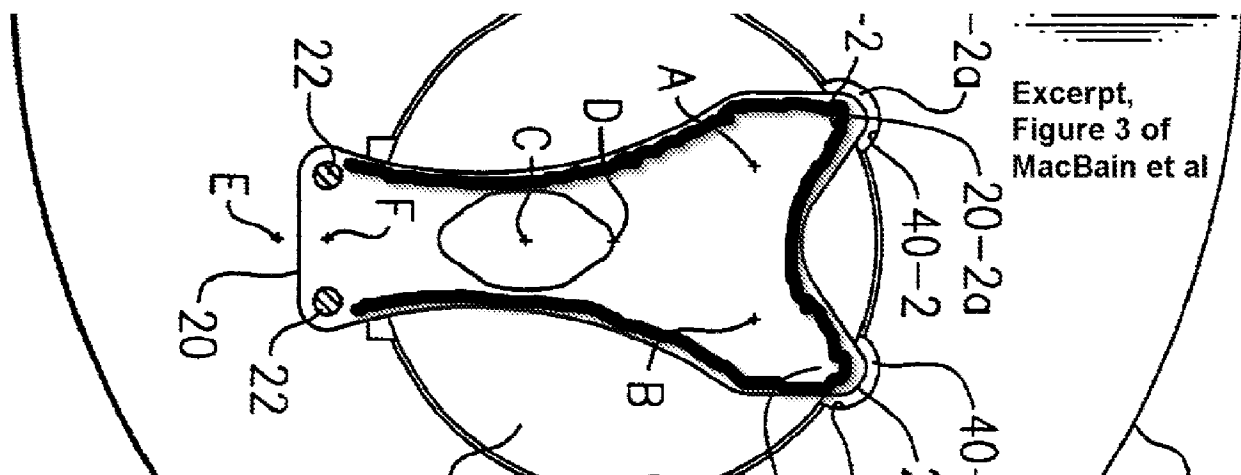
10. In Re Claim 1, with reference to Figure 3 annotated above, MacBain et al discloses a suction valve for a small hermetic compressor (Abstract states “compressor suction valve”) of the type presenting a compression cylinder (D) which has an end closed by valve plate (30), said valve comprising:

- a fixation end portion (annotated) to be affixed to the valve plate;
- a bending median portion (annotated) provided with a median opening (annotated) aligned with a discharge orifice (see Figure 1); and
- a sealing end portion (annotated) operatively associated with the suction orifice provided in the valve plate,
- a higher bending region (as annotated by the shaded area, the width of which decreases along the higher bending region) of the flexible vane of the valve
- a first portion of the higher bending region as depicted above, bounded by at least one curved edge (first curvature) represented by the external edge of the flexible vane; (the shaded rectangles in the annotated first and second portions above highlight the options for the first and second curvatures)
- a second portion of the higher bending region as depicted above, bounded by the curved external edge and curved internal edge (second curvature)
- wherein the distance between an external edge of the flexible vane and its adjacent internal edge portion of the median opening diminishes more “intensely” in a first portion as implied by the steep decline in the first portion as compared to the gradual decline in the second portion; from a maximum value close to the end fixation portion, to a minimum value, close to the boundary of the higher bending region of the

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flexible vane,

- wherein the flexible vane is configured to distribute opening forces along the higher bending region (no areas of stress concentration) allowing the flexible vane to be bent along the higher bending region in an open position, and
- the bending median portion and sealing end portion “presents” a U shape as annotated below, with the legs being symmetrical about a longitudinal axis of the flexible vane, are of equal length and are united by the fixation end portion as depicted:



(Note that the limitation “presenting” could also be broadly interpreted as enclosing a U shape, since the outline is not being claimed as U shaped. Further, the “united by” limitation could be interpreted as bringing the two legs together.)

11. In Re Claim 4, the median opening has an elongated oval (egg) shape.

12. In Re Claim 5, as discussed in Claim 1, the distance diminishes more rapidly (“intensely”) close to the fixation end as implied by the steep decline as compared to the gradual decline in the second portion.

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13. In Re Claim 9, the forces are not concentrated in the region of the bending median portion that is adjacent to the fixation end portion because the thickness is more at the base of the high bending region and the curves at the relevant boundaries are smooth.

Claim Rejections - 35 USC § 103

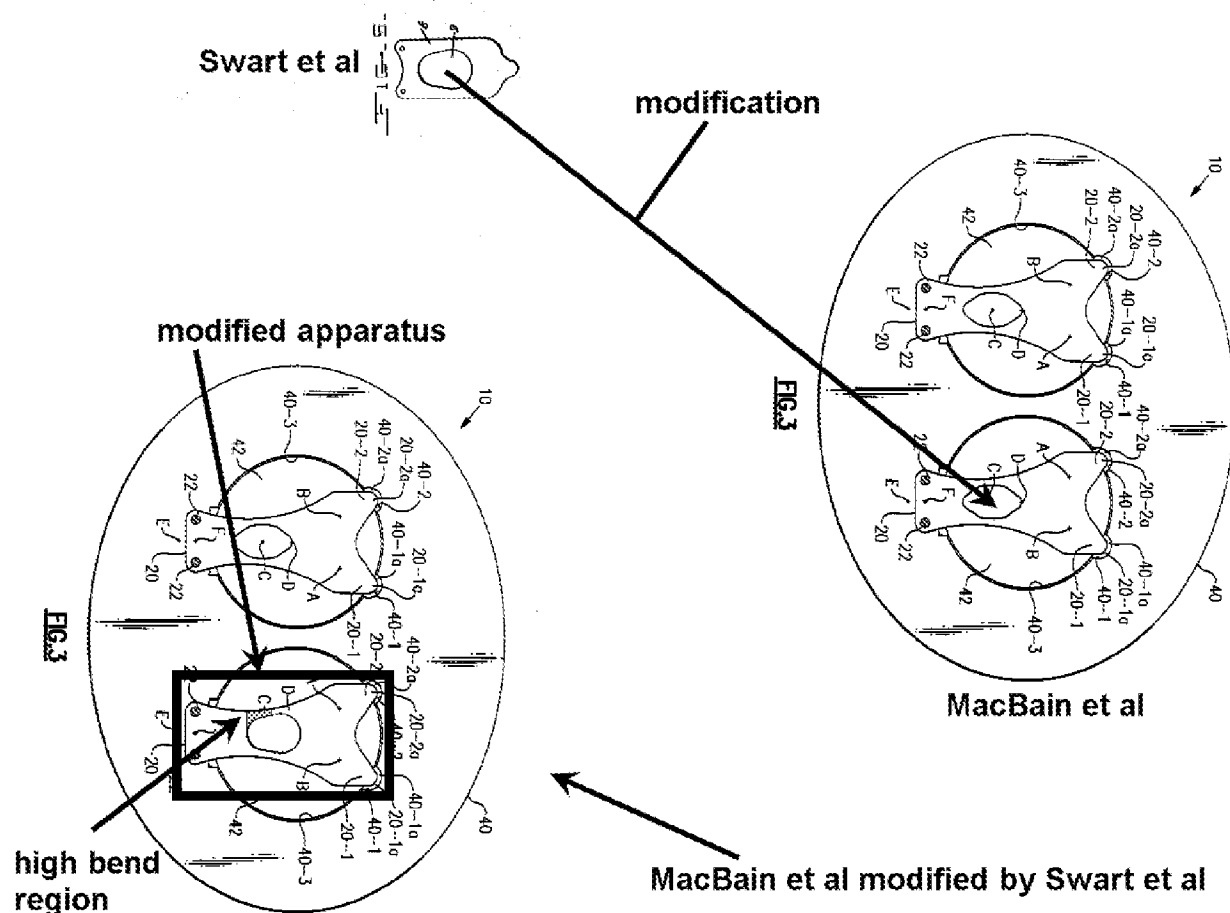
14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacBain et al (PG Pub US 20030068245 A1, filing date: October 5, 2001)

16. In Re claim 6, MacBain et al as applied to claim 1 discloses the claimed limitations except for the length of the higher bending region being 50 %. It would have been obvious to a person having ordinary skill in the art at the time of the invention to choose a value of 50 % since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art - MPEP 716.02 (b) [R2].

17. Alternatively, Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacBain et al (PG Pub US 20030068245 A1, filing date: October 5, 2001) in view of Swart et al (US Patent 2,859,912 A)

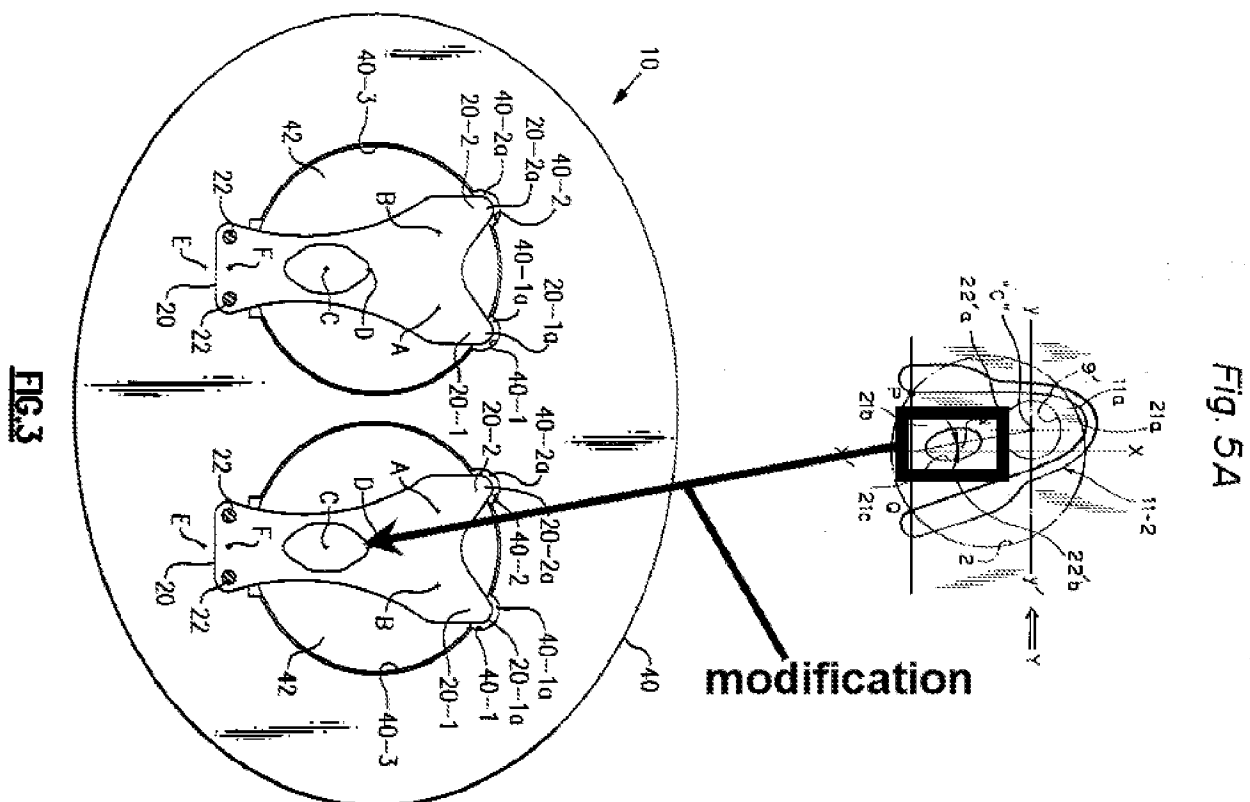


18. Alternatively, in addition to MacBain et al as applied to claim 1 above, it would have been obvious to a person having ordinary skill in the art at the time of the invention to substitute the hole (opening) of MacBain et al with the hole (opening) of Swart et al because the modification yields predictable results since both valves relate to the suction side of reciprocating piston compressors. In the modification, the initial

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curvature of the boundary (progressing from left to right) of the hole of Swart et al is responsible ("by way of") for the rapid initial diminishing of distance between an external edge and adjacent internal edge portion of the median opening. The initial curvature therefore reads on the first curvature as claimed. The boundary of the vane reads on the second curvature as claimed.

19. Alternatively, Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacBain et al (PG Pub US 20030068245 A1, filing date: October 5, 2001) in view of Ikeda et al (US Patent 4,764,091 A)



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20. Alternatively, in addition to MacBain et al as applied to claim 1 above, it would have been obvious to a person having ordinary skill in the art at the time of the invention to substitute the hole (opening) of MacBain et al with the hole (elliptically shaped opening) of Swart et al because the modification yields predictable results since both valves relate to the suction side of reciprocating piston compressors. In the modification, the initial curvature of the boundary (progressing from left to right) of the hole of Ikeda et al is responsible ("by way of") for the rapid initial diminishing of distance between an external edge and adjacent internal edge portion of the median opening. The initial curvature therefore reads on the first curvature as claimed. The boundary of the vane reads on the second curvature as claimed.

21. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacBain et al (PG Pub US 20030068245 A1, filing date: October 5, 2001) in view of Ikeda et al (US Patent 4,764,091 A)

22. In Re claim 8, "cut from a support blade" is a product by process limitation. In accordance to MPEP 2113, the method of forming the flexible vane (by cutting from the support blade) is not germane to the issue of patentability of the device itself. Further, "in order to" is an intended use recitation that does not structurally limit the claim. Alternatively, MacBain et al as applied to claim 1 discloses all the claimed limitations except for a gap, between the cutting edge of the support blade and the external edge of the valve, that is larger adjacent to the fixation end portion of the flexible vane.

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23. Nevertheless, Ikeda et al discloses a gap that is larger at the fixed end of the vane than its apex.

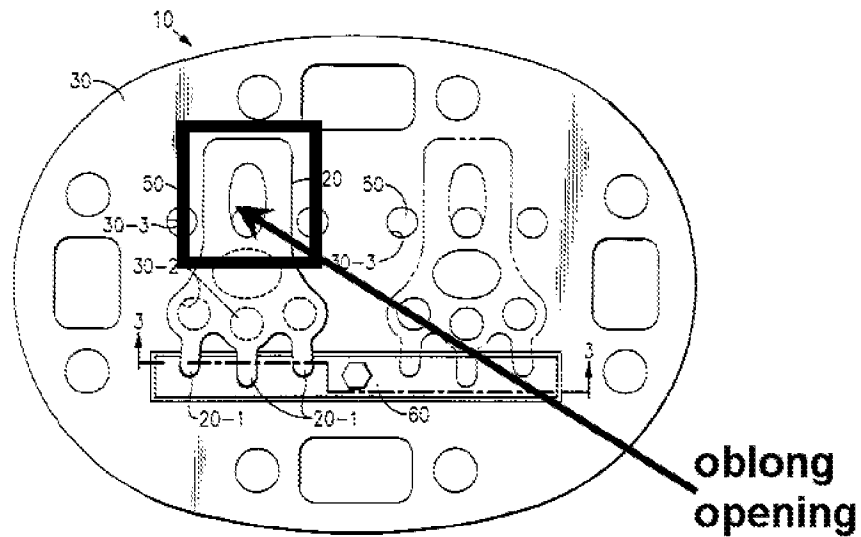
24. It would have been obvious to a person having ordinary skill in the art at the time of the invention to form the valve of MacBain et al as a cut from a support blade with a gap, between the cutting edge of the support blade and the external edge of the valve, that is larger adjacent to the fixation end portion of the flexible vane as taught by Ikeda et al because the modification yields predictable results since both valves relate to the suction side of reciprocating piston compressors.

Response to Arguments

25. The applicant has not made specific arguments with regards to why the amendments overcome the prior art of record.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fraser et al (US Patent 6,099,275 A) discloses another oblong shaped opening in a valve of Figure 2:



Any inquiry concerning this communication or earlier communications from the examiner should be directed to DNYANESH KASTURE whose telephone number is (571)270-3928. The examiner can normally be reached on Mon-Fri, 9:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272 - 7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

DGK